THE CLAIMS

1. A signal detector comprising:

a receiver for providing a segment of complex samples of a received signal comprising a desired signal perturbed by noise or pseudo-noise and subject to phase reversals at defined frame boundaries;

a multiplier configured to multiply data derived from the segment with data representative of a hypothesis regarding the signal of interest or a parameter of the signal of interest, and for providing product data representative thereof; and

a coherent integrator for coherently integrating the product data over a desired duration responsive to the location of a frame boundary as determined from a source other than the received signal, and deriving therefrom correlation data useful for detecting the signal of interest or a parameter thereof.

2. The signal detector of claim 1 in which the receiver is an RF receiver.

3. The signal detector is claim 1 in which the signal of interest is a carrier signal modulated with a repeating PN code.

4. The signal detector of claim 1 further comprising a hypothesis generator for generating a plurality of hypotheses.

5. The signal detector of claim 1 further comprising a processor for receiving and analyzing the correlation data.

6. The signal detector of claim 1 in which the source is a cellular or PCS phone network.

7. The signal detector of claim 1 further comprising a phase detector for detecting phase reversals of the signal of interest, and the coherent integrator, responsive to the

detection of a phase reversal, is configured to adjust for the phase reversal to allow coherent integration to proceed across a frame boundary.

8. The signal detector of claim 7 further comprising circuitry for, responsive to the detection of a phase reversal, flipping the sign of samples of the received signal.

9. The signal detector of claim 1 further comprising a frame boundary detector for detecting frame boundaries.

10. The signal detector of claim 9 wherein the coherent integrator, responsive to the detection of a frame boundary, is configured to non-coherently combine coherent integrations performed on either side of the frame boundary.

11. The signal detector of claim 9 wherein the coherent integrator, responsive to the detection of a frame boundary, is configured to derive first correlation data by coherently integrating the product data across the frame boundary under a first hypothesis which assumes the phase of the signal of interest is unchanged across the frame boundary, and to derive second correlation data by coherently integrating the product data across the frame boundary under a second hypothesis which assumes the phase of the signal of interest flips across the frame boundary.

12. The signal detector of claim 11 further comprising circuitry selecting one of the first and second correlation based on which of the two corresponding hypotheses is more likely.

13. A GPS receiver including the signal detector of claim 1.

14. A method for detecting a signal comprising:

Sub C1

receiving a segment of complex samples of a signal comprising a signal of interest perturbed by noise or pseudo-noise and subject to phase reversals at defined frame boundaries;

multiplying data derived from the segment with data representative of a hypothesis regarding the signal of interest or a parameter of the signal of interest to provide product data;

detecting a frame boundary from a source other than the received signal; and

coherently integrating the product data over a desired duration responsive to the location of the frame boundary to provide correlation data useful for detecting a signal of interest or a parameter thereof.

15. The method of claim 14 wherein the signal of interest is a carrier signal modulated with a repeating PN code.

16. The method of claim 14 further comprising detecting the frame boundary from a cellular or PCS phone network.

17. The method of claim 14 further comprising detecting a phase reversal and adjusting the coherent integrating step responsive thereto to allow coherent integration to proceed across the frame boundary.

18. The method of claim 17 further comprising generating and testing a plurality of hypotheses.

19. The method of claim 14 further comprising detecting a frame boundary and, responsive thereto, non-coherently combining coherent integrations performed on either side of the frame boundary.

20. The method of claim 14 further comprising detecting a frame boundary and, responsive thereto, deriving first correlation data by performing the coherent integration step under a first hypothesis in which the phase of the signal of interest remains unchanged across the frame boundary, and deriving second correlation data by performing the coherent integration step under a second hypothesis in which the phase of the signal of interest flips across the frame boundary.

21. The method of claim 20 further comprising selecting one of the first and second correlation data based on a determination of which of the two corresponding hypotheses is the correct one.

22. Computer readable media on which is stored a series of instructions embodying the method of claim 14.

Sub C2